

## Patent Claims

1. A method of line matching for analog communications lines in telecommunications networks via at least one signal processor and/or programmable digital filter, comprising:
  - calculating coefficients of a line transmission function via an echo compensator;
  - performing a comparison of the calculated coefficients of the line transmission function and pre-specified filter coefficients in a digital filter device assigned to an analog communication line;
  - identifying incorrect line matching based on the comparison;
  - generating a new set of filter coefficients when incorrect line matching is identified; and
  - feeding the new set of filter coefficients into the digital filter device.
2. The method according to claim 1, wherein the coefficients of the line transmission function calculated by the echo compensator and provided for comparison are those that were identified by the echo compensator for a first line gateway in the line path.
3. The method according to claim 1, wherein the comparison is made using a folding and/or Fourier transformation operations.
4. The method according to claim 2, wherein the comparison is made using a folding and/or Fourier transformation operations.
5. The method according to claim 1, wherein the comparison is executed between compute-time optimized approximation methods.
6. A device for line matching for analog communications lines in telecommunications networks, comprising:
  - an echo compensator to calculate coefficients of a line transmission function;
  - at least one signal processor device:
    - to record the coefficients of the line transmission function calculated by the echo compensator;

to compare the calculated coefficients of the line transmission function with pre-specified filter coefficients in a digital filter device assigned to an analog communication line;

to generate new parameters when incorrect line matching is identified; and  
to feed the new parameters into the digital filter device.

7. The device according to claim 6, wherein the comparison is made using a folding and/or Fourier transformation operations.

8. A machine readable medium storing a program to control a computer to perform a method of line matching for analog communications lines in telecommunications networks, the method comprising:

calculating coefficients of a line transmission function via an echo compensator;  
performing a comparison of the calculated coefficients of the line transmission function and pre-specified filter coefficients in a digital filter device assigned to an analog communication line;

identifying incorrect line matching based on the comparison;  
generating a new set of filter coefficients when incorrect line matching is identified; and  
feeding the new set of filter coefficients into the digital filter device.